

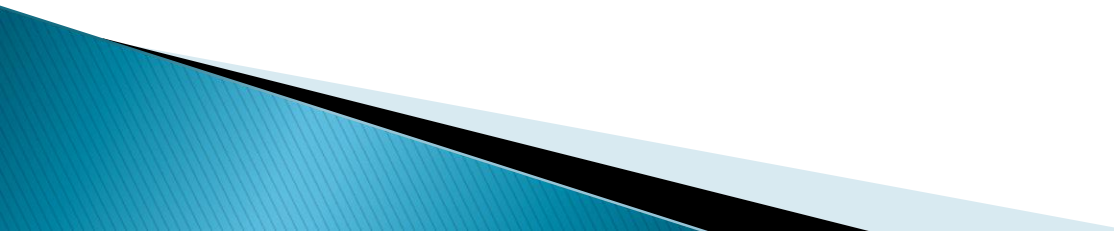
# MDOT 2012 ITS PROJECT SPECIFICATIONS

Contractor Presentation

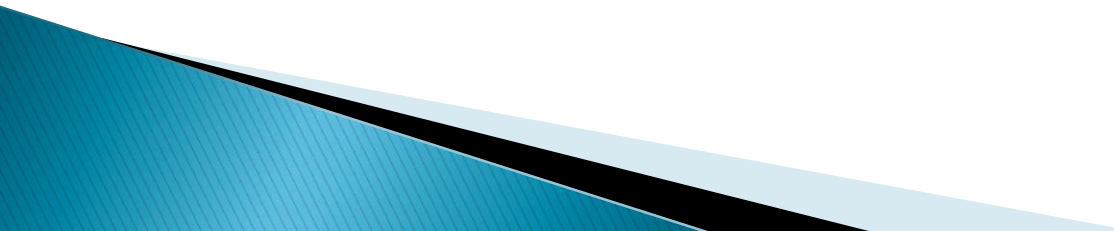
**Disclaimer:** This document is developed to summarize changes to the 2012 special provisions . This is not an official MDOT document and its contents should not be referenced on specific ITS Contracts.



# OUTLINE

- ▶ Reason for SP changes
  - ▶ Changed approach:
    - Project Overview
    - Basic Methods and Materials for ITS work
    - System Integration and Testing SPs
  - ▶ Significant changes to existing SPs
  - ▶ New SPs introduced
  - ▶ Changes to Warranty Requirements
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# REASONS FOR SP CHANGES

- ▶ Address common variances and known issues
  - ▶ Simplifying payment approach
  - ▶ Improving standards for electrical/bonding/grounding items
  - ▶ Upgrade functional requirement to new standards
  - ▶ Address warranty requirements
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# Project Overview, Basic Methods and Materials for ITS Work and System Integration and Testing

## ▶ **Project Overview**

- Specific project requirements
- Not a pay item

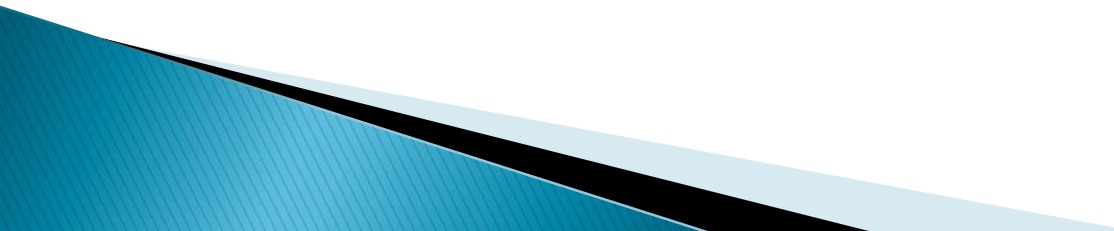
## ▶ **Basic Methods and Materials for ITS work**

- Set of rules and standards on submittals, testing, training and Regulatory Agencies
- Not a pay item

## ▶ **System Integration and Testing**

- Acceptance Test Procedures (ATP requirements)
  - Lump Sum pay item
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# Significant changes to existing SP

- ▶ **Fiber Optic**
  - ▶ **ITS Cabinet**
  - ▶ **Unlicensed Wireless Radios**
  - ▶ **Wireless Link Backhaul**
  - ▶ **Spun Concrete Pole and drilled shaft foundation**
  - ▶ **Dynamic Message Sign, install and integrate**
  - ▶ **Environmental Sensor Station (ESS)**
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# Fiber Optic

- **Splicing Requirements**

- All splicing conducted inside the ITS Cabinet
- Introducing Fiber Optic Splice cabinet
- Introducing Rack Interface Center

- **Pay items**

- Fiber optic Pay items grouped in assemblies
- Fiber optic Fusion Splicing paid for under the FO cable pay item

# ITS Cabinet

- **Electrical Requirements**

- Panel Distribution Unit, Surface Mounted
- Circuit Breakers sizes:
  - 60A main breaker for DMS locations
  - 30A main breaker for CCTV locations

- **Materials**

- Ground Mounted ITS Cabinet
- Pole Mounted ITS Cabinet
- Environmentally Controlled ITS Cabinet

- **Pay items**

- ITS Cabinet no longer includes, UPS, MFES, DVE or TDS
- Cabinet Monitoring System still included the cost

# Unlicensed Wireless Radios

## ▶ Testing requirements

- ▶ Actual field testing **prior** to construction with live radios
  - ▶ Throughput
  - ▶ Received Signal Level
  - ▶ Line of Sight
  - ▶ Link Budget Calculations
- ▶ Testing post construction
  - ▶ As required in the ATP
- ▶ **Pay Items**
  - ▶ No Change



# Spun Concrete Pole and Drilled Shaft Foundation

- **Pole design**
  - Drilled shaft foundation design to be provided by designer
- **Construction detail change**
  - 20 Ft foundation instead of 15 ft
  - Maximum CCTV height 85 ft
- **Pay Items**
  - Added pay items for foundation depth

# Dynamic Message Sign

- ▶ **DMS Procurement**
  - ▶ MDOT will procure all signs
  - ▶ Contractor to install and integrate
- ▶ **DMS Sign, Support Structure and foundation**
  - ▶ Submit Drilled Shaft Installation Plan prior to construction
- ▶ **Pay Items**
  - ▶ DMS Sign, Install and Integrate
  - ▶ DMS Sign, Support Structure and foundation (Separate SP)

# Environmental Sensor Station (ESS)

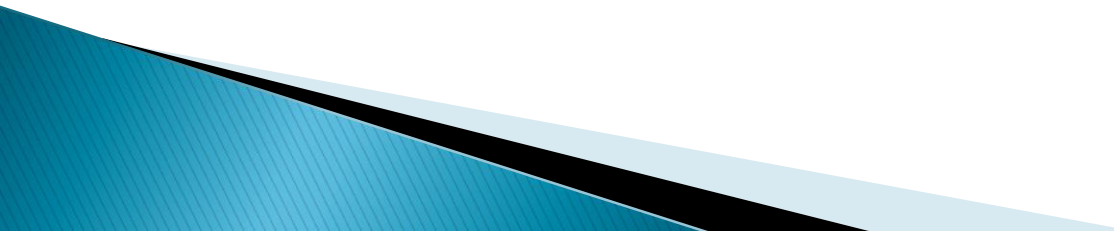
- **Special Provisions**

- Separate SP for each sensor and Remote Processing Unit (RPU)
  - Atmospheric Sensors (visibility, wind, humidity etc)
  - Pavement Sensor
  - Sub-Surface Temperature Probe
  - Infrared Illuminator
  - IP Surveillance System
  - Remote Processing Unit
  - IP Power Distribution Unit (New)

- **RWIS Central Software**

- RWIS Central Software separate from ATMS/Delcan
- Contractor not responsible for head-end software integration

# NEW SP introduced

- ▶ Grounding , bonding, lightning protection and surge protection for ITS Equipment
  - ▶ Site grounding system for communication towers, communication shelters and surrounding compound
  - ▶ Uninterruptible Power Supply for ITS
  - ▶ Managed Field Ethernet Switch
  - ▶ Digital Video Encoder
  - ▶ RWIS Sensors ( separate spec. for each sensor)
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# Changes to Warranty Requirements

## ▶ Reason for change

- FHWA Requirements

- Manufacturers Warranty only
- Bonding required for anything above Manufacturers Warranty

## ▶ All Special provisions are affected

### Examples:

#### ▶ Wireless Link Backhaul

- ▶ *1-year Manufacturer path warranty*

#### ▶ Surveillance Systems

- ▶ *5- years Manufacturer's parts and labor*

#### ▶ DMS Large Install and Integrate

- ▶ *DMS factory-trained technician verify labor*
- ▶ *Manufacturer's warranty after final acceptance*